

REMARKS

Claims 1-57 have been rejected as anticipated by Takala et al. (US 6,788,294, "Takala"). In response, Applicants have made various amendments and request reconsideration of this rejection in light of the above amendments and following remarks. Of the rejected claims, claims 2, 3, 5, 6, 12, 25, 26, 29 and 36 have been canceled, leaving claims 1, 4, 7-11, 13-24, 27-28, 30-35 and 37-57 pending for continued examination.

Regarding claims 1, 4, 7-11 and 13-23, Applicants have amended claim 1 to specifically recite a "keypad with a circuit board carrying switches, and multiple keys displaceable toward the circuit board to activate a corresponding switch." Thus, the aspect of the invention now recited in claim 1 features altering a visual characteristic of at least one key of a keypad of the type now recited, by passing a field through field-stable electrophoretic ink.

Takala's disclosure of the use of E-ink is limited to a different type of input device. Each of Takala's examples include a layer (typically designated layer 13) of a material "whose volume is responsive to the magnitude of an electric and/or magnetic field, the purpose of this layer being to raise a certain area ... from the surrounding area and thus indicated an area that can be used ... as a selector." (Takala 5:66-6:5; see also Takala 1:51-56; 4:2-4; 4:62-67; 7:29-35; 8:12-15; and 8:67-9:7) Thus, Takala's purpose is to provide an input device that can be *physically* reconfigured to raise or lower various areas to create temporary 'keys', such as to configure the device as a user interface for various functions (e.g., as a game controller, TV remote control, or mobile phone, as discussed at Takala 3:41). Takala's use of E-ink is therefore to create a reconfigurable visual appearance to correspond to the various tactile reconfigurations of his input surface.

Claim 1, by contrast, features the use of electrophoretic ink in a discrete, manipulable key of a keypad, such as those that have independently depressible keycaps, as are found on most computer or cell phone keypads, for example. As such keypads are not physically reconfigurable (i.e., in a tactile sense) as are Takala's devices, his purpose for incorporating alterable E-ink is not applicable to such keypads, and one of ordinary skill in the art would not obviously be motivated by a fair reading of Takala to alter a keypad of the type now recited in claim 1.

The Examiner's remarks regarding original claims 4 and 5, which featured manipulable keycaps, do not reflect a fair reading of Takala. The Examiner finds that "Takala ... discloses ... that the designated area is of an exposed surface of a manipulable keycap," citing Takala's Fig. 1, 4:55-67; 5:1-12 and 6:2-20. However, none of those cited passages discloses anything close to what is understood in the art as a keycap. Fig. 1 (described in the citation from 6:2-20) simply shows a layered surface, from which various areas may be raised by changing the volume of different regions of layer 13, to "indicate an area of the surface than can be used, e.g., as a selector." Although Takala refers to 10 as a "key element," 10 is clearly an entire input surface from which discrete regions may be raised to create tactile features corresponding to input areas, in short: a tactilely reconfigurable touch pad, to which the addition of keycaps would be counter to Takala's very purpose. The disclosure of 4:55-5:12 is of an "electronic drawing board" that has a "flat drawing surface, on which it is possible to draw ... by pressing the surface with a suitable pen or a finger." The unique feature of Takala's drawing board example is that the "surface can be raised up" in response to the detected pressing, so as to create a "three-dimensional plot" (i.e., a *tactile* representation of the drawing) on the previously flat surface, or to create a visual image of the drawing by "controlling the imaging in the E-ink layer" of the drawing surface. There is understandably no disclosure of keycaps in Takala's drawing board, nor would there be any reason to add any.

Thus, Applicants respectfully submit that claim 1, and all pending claims depending therefrom, are both novel and non-obvious over Takala.

Regarding claims 24, 27-28, 30-35 and 37, Applicants have amended claim 24 to specifically recite a keypad including an array of keys and an array of key switches disposed beneath the array of keys and responsive to manipulation of the keys by a user to register an input associated with the manipulated keys, wherein at least some of the keys each contain a field-stable electrophoretic ink responsive to passing a field therethrough to alter a visual characteristic of the key to form a desired graphic label visible within the key. Thus, as with claim 1 as discussed above, the aspect of the invention now recited in claim 24 features altering a

visual characteristic of at least one key of a keypad of the type now recited, by passing a field through field-stable electrophoretic ink.

Applicants respectfully submit that, at least for the same reasons given above with respect to claim 1, claims 24, 27-28, 30-35 and 37 are also both novel and non-obvious over Takala.

Regarding original claim 38, Applicants respectfully traverse the Examiner's rejection of this claim as lacking novelty when compared to Takala, and ask for reconsideration.

From the remarks on page 17 of the office action, the Examiner is apparently attempting to read the claim language "the key containing multiple electrically conductive elements electrically isolated from each other and disposed to overlap in plan view" on Takala's discrete layers 11-17 extending across his touchpad. However, claim 38 also clearly recites that the conductive elements are each "*shaped* to provide a different graphic image visible from the exposed key surface" (emphasis added). Thus, with the structure of claim 38, alternate graphic images may be obtained in the same area by simple activation of the entirety of different *shaped* conductive elements. Takala's structure, by contrast, requires the significantly more complicated activation of particular regions within a single, continuous layer of material extending across his entire input device. Neither does Takala provide for representation of alternate images by activation of different overlapping layers that each correspond to a different image. Thus, despite the Examiner's valiant attempts to read claim 38 on Takala's drawing board embodiment (Takala 4:55-5:12), there is absolutely nothing in Takala to suggest "selecting from among the graphic images associated with" different, overlapping conductive elements within keys.

Thus, Applicants respectfully submit that claim 38 is also both novel and non-obvious over Takala.

Regarding original claims 39-42, Applicants respectfully traverse the Examiner's rejection of these claims as lacking novelty when compared to Takala, and ask for reconsideration.

Claim 39 features placing a data input device adjacent a printer, and passing a field from the printer through a designated area of the device to remove a previously applied graphic label from the designated area while forming a new graphic label visible within the designated area.

In rejecting claim 39, the Examiner states that:

Takala implicitly discloses a remote printer by disclosing digital *divergence means* and the integration of various different electronic devices into one common device including the controlling of a remote *printer*, a text TV set wherein a user interface comprising keys can at one time be used as the keyboard of a computer, at another time as a game controller with a few selectors and at a third time as the remote control for a text TV set and the *printer is connected to the computer and the keyboard can be used to generate electric fields and passing the electric fields to the printer*; see column 3, lines 30-55). (Office action, page 19)

With all due respect to the Examiner, such a characterization is far from Takala's actual disclosure, which is in pertinent part as follows:

The key that is the object of the invention can also be employed for the common control of various electronic devices. An user interface comprising keys can at one time be used as the keyboard of a computer, at another time as a game controller with a few selectors, and at a third time as the remote control for a text TV set. With digital convergence, the benefit gained from a user interface adaptable to the situation and environment will increase in the future. Digital convergence means the integration of various different electronic devices into one common device, for example, the integration of a computer, a mobile phone, a PDA and a camera into a single device. Devices created for different purposes require different user interfaces, though, and using prior art solutions, a common integrated user interface would require lots of tradeoffs between the user interfaces of the different devices; this would render the user interface inconvenient and user-unfriendly. However, a user interface implemented using the key according to the invention makes it possible to integrate different electronic devices into one in such a way that all the devices can retain their separate user interfaces. This means that it is not required to attempt to use a camera, for example, by means of a computer keyboard unsuitable for the purpose; when changing over from the computer application to the camera application, the user interface can preferably be changed from a word

processor keyboard, for example, into a camera user interface. (Takala 3:30-56)

Applicants are not entirely certain what the Examiner means by Takala “disclosing *digital divergence means*,” assuming that this refers to Takala’s discussion in the above-cited paragraph of digital *convergence* as the “integration of various different electronic devices into one common device.” However, the Examiner’s apparent assertion that Takala discloses “controlling of a remote printer” or that “the printer is connected to the computer and the keyboard can be used to generate electric fields and passing the electric fields to the printer” is factually incorrect. In point of fact, there is absolutely no mention of printers in Takala.

Takala does not go to great lengths to discuss how the reconfiguration of his input device from a game controller to a TV remote, for example, is to be triggered, but there is nothing in Takala that suggests placing the device adjacent a printer and printing new graphic labels on the device. Rather, it is more likely that Takala intended any graphic reconfiguration to accompany tactile reconfiguration, and to be initiated by some input from the user, perhaps through the device itself. In Takala’s drawing board example, the visual appearance is altered by drawing on the surface with a pen or finger, neither of which be considered a “printer” that would be capable of “passing a field through a designated area of the device to remove a previously applied graphic label,” as recited in claim 39.

Thus, Applicants respectfully submit that original claim 39, and all claims depending therefrom, are also both novel and non-obvious over Takala.

Regarding claims 43 and 44, Applicants respectfully traverse the Examiner’s rejection of these claims as lacking novelty when compared to Takala, and ask for reconsideration.

Claim 43 is directed to a method of altering format of previously entered text, and features detecting manipulation of a specific key of the keypad, and, in response to detecting manipulation, *replacing a displayed, selected text with a differently formatted version of the selected text*, according to a predetermined series of formats through which the selected text is cycled upon multiple, sequential manipulations of the specific key. For example, Applicants

disclose cycling the visual appearance of alphabetical characters on keycaps between italicized, underlined and bolded versions of such characters (as recited in claim 44).

Takala discloses pre-configuring his input device, prior to sale, in accordance with a selected language (Takala 3:9-20). He also, as the Examiner notes, discloses reconfiguring the device (presumably by the user) into different types of devices, such as a TV remote or game controller, that require different input functions. However, there is nothing at all in Takala that suggests *reformatting text labels in response to manipulation of one of the device keys by a user*. The Examiner appears to take no note of the phrase “differently formatted version of the selected text” in claim 43, as Takala makes no mention of reformatting text labels in response to user input. The Examiner’s contention that “Takala … discloses a word processor keypad with the series of formats including underlined, bold and italicized” is simply incorrect. Takala discloses configuring his input device to function as a keypad, but that does not necessarily imply graphically altering the labels of keys to show one of a number of selectable formats, any more than a standard computer keyboard necessarily provides such function. Not only is such a feature not clearly implicit in the concept of a computer keyboard, most modern computer keyboards have *fixed* key labels that do not alter to show a selected text format. Therefore, Takala’s teaching that his input device can be selectively configured as a computer keyboard does not inherently disclose reformatting text labels, and Applicants respectfully submit that Takala does not meet the standards of an anticipatory reference on the principle of inherency, as outlined by the Federal Circuit.

Furthermore, Takala provides no motivation to one of ordinary skill to derive the method claimed in Applicants claim 43. Thus, Applicants respectfully submit that original claims 43 and 44 are also both novel and non-obvious over Takala.

Regarding claims 45-57, Applicants respectfully traverse the Examiner’s rejection of these claims as lacking novelty when compared to Takala, and ask for reconsideration.

Claim 45 features transmitting a signal to the input device from a remote location to alter the visible label of at least one of the data input areas of the device in response to the signal.

With respect to this limitation, the Examiner characterizes Takala as disclosing that “a signal may be generated by the pen or a finger on the input device from a remote location such as a user remote from the input device; see column 4, lines 55-67.” Although not explicitly stated, it seems as if the Examiner is suggesting that the “signal” generated on Takala’s touch pad by a pen or finger *on the input device* is transmitted from a remote location in that the rest of the body of the user (having the finger or holding the pen) may be considered as being in a “remote location.” If such is the Examiner’s intent, Applicants find this characterization of Takala particularly beyond reasonable, and against accepted standards for claim interpretation, most notably that although claim terms are to be given their broadest reasonable interpretation, that interpretation must be reasonable to one of ordinary skill in the art. The meaning of the words of the claim in this context are clear from the disclosure, and Applicants respectfully submit that the Examiner would be hard pressed to find anyone of ordinary skill in this art that would interpret claim 43 as reading on the transmission of a ‘signal’ to an input device by a pen or finger of a user in direct physical contact with the device.

As an alternative basis for the rejection, the Examiner refers to the block diagram of Takala’s Fig. 3, particularly the device controlling section 30 and functional block diagram 40 of the device controlling section, and notes that interface-controlling software is stored in memory unit 34. Although not explicitly stated, Applicants infer that the Examiner is taking the position that memory unit 34 can be considered a “remote location” from which (electrical) signals are transmitted to the touch pad (input device). Assuming such is the Examiner’s position, Applicants submit that in the context of claim 49 the phrase “transmitting a signal … from a remote location” would be clearly understood by those of ordinary skill in this art as requiring a signal transmission from a location *remote from the device itself*. By contrast, the only signals received by Takala’s E-ink layer are sent from within his device (“Fig. 3 shows the block diagram of *a device* that represents an embodiment according to the invention. *The device* comprises a key element section 10 and a device controlling section 30.” Takala 8:6-8, emphasis added.)

Thus, Applicants respectfully submit that claim 45, and all pending claims depending therefrom, are both novel and non-obvious over Takala.

Applicants have addressed the patentability of the claims by focusing on the novelty and non-obviousness of the independent claims, and have not found it necessary to address many of the additional prior art characterizations made by the Examiner with respect to various dependent claims. This should not be taken as a concurrence with the Examiner's position, as many such characterizations are as unjustified as those addressed above, and sufficient reasons have been presented above for the allowance of all pending claims.

However, responses to a few of the additional arguments advanced by the Examiner with respect to certain dependent claim features should be noted for the record. For example, the Examiner mischaracterizes Takala as disclosing, with respect to claim 47, that the altered visible label contains one of advertisement, location, time or subscription-specific information, whereas the referenced portion of Takala simply says that the device can function as, e.g., a TV remote, camera or game controller, none of which inherently involves key labels containing advertisement, location, time or subscription-specific information. Regarding claim 48, the Examiner mischaracterizes Takala as disclosing signal transmission over a cellular or other wireless network or communication system, when all that Takala discloses is controlling his input device from software embedded in memory within the device. Regarding claim 49, the Examiner mischaracterizes Takala as implicitly disclosing altering the label as a function of subscriber service selected by a user, referring only to Takala 5:50-65, from which Applicants can divine no possible intended support for the conclusory assertion. This is but an exemplary response to the Examiner's reasons for finding three of the pending dependent claims anticipated; similar response could be made with respect to other dependent claims were such to be considered necessary. Applicants respectfully submit that further argument with respect to dependent claims is not necessary, as the pending dependent claims each depend from a claim that Applicants maintain is allowable over the art of record.

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Should the Examiner feel that further amendment and/or discussion is necessary to advance the pending claims to allowance, the undersigned attorney respectfully requests the favor of a telephone interview to promptly resolve any remaining issues.

Enclosed is a \$225 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

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